

## Chula Vista MSCP Subarea Plan

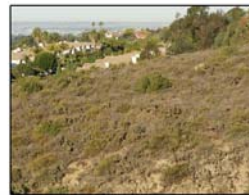
- Subarea Plan Approved: February 2003
- Take Permit and IA: January 2005
- 86 Covered Species
- 99% "Hard-lined"
- Conservation Estimates: 9,243 acres
  - 4,993 within Subarea
  - 4,250 additional conservation outside Subarea
- 69% (6,365 acres) have been secured



## Reconnecting with Nature: Urban Canyons

### Importance

- Support threatened and/or endangered species
- Provide connectivity to Core Areas
- Less susceptible to large fires
- Green Infrastructure: connecting people to natural open space

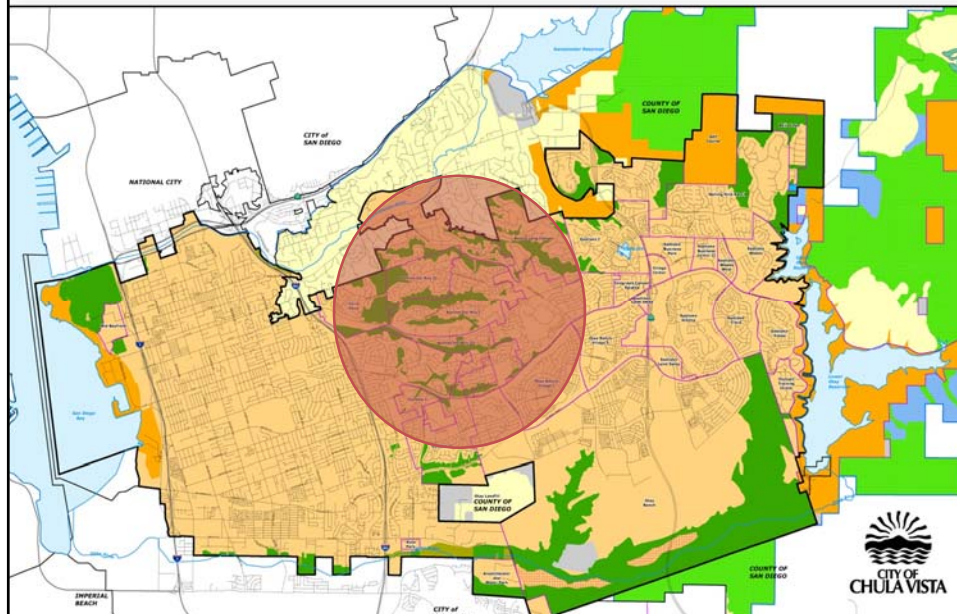


### Challenges

- Edge Effects: access control, domestic pets, invasives
- Funding



## Central City Preserve Management Area (PMA)



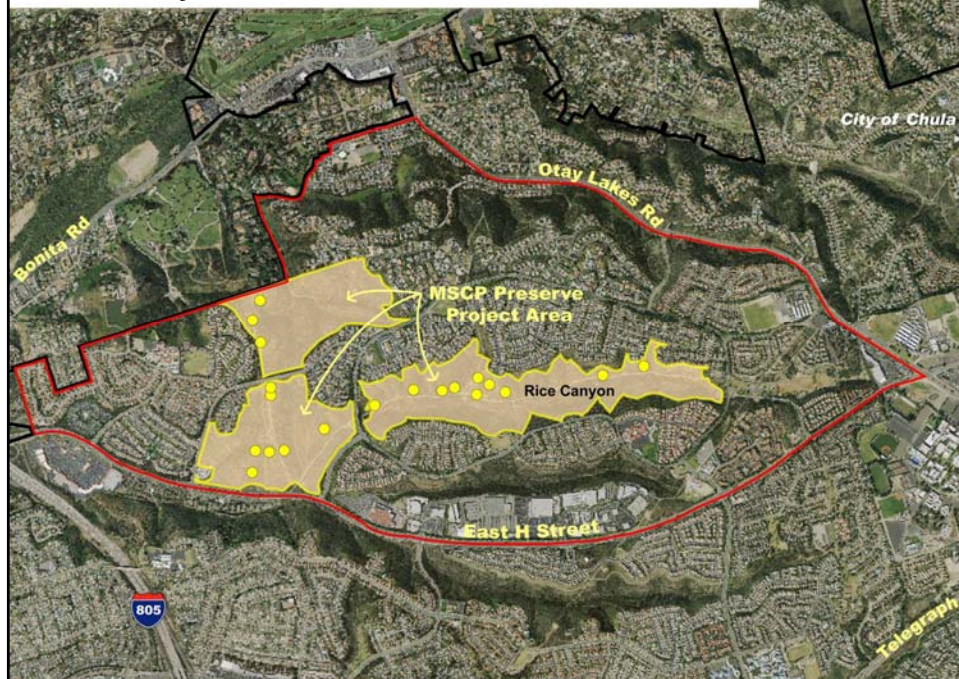
### Central City PMA

- 1,600 acres
- Six predominant habitat types
  - Maritime Succulent Scrub
  - Coastal Sage Scrub
  - Native Grasslands
  - Southern Willow Scrub
  - Mule Fat Scrub
  - Freshwater Marsh
- Large Populations of Narrow Endemic Species
  - Otay Tarplant
  - Snake Cholla
  - San Diego Thorn-mint
- Connectivity to Sweetwater and Natl. Wildlife Refuge





## Central City Habitat Restoration Grants



### Costal Cactus Wren Habitat Restoration Grant

- Location: Central City Preserve
- Size: 9 acres
- Project Objectives:
  - Restore/enhance degraded habitat
  - Increase quality/quantity of existing cholla patches
  - Reduce weed and native shrub competition
  - Reduce uncontrolled access
- Techniques:
  - Dethatch and treat areas dominated by non-natives
  - Selective thinning, removal and/or treatment of native shrubs
  - Protect restoration areas by blocking unauthorized trails with native plant material
  - Collect and redistribute cholla cuttings
  - Intensive Weed Control





## Costal Cactus Wren Habitat Restoration Grant

### Results:

- Cholla cover, density and height is increasing
- Wren can re-occupy sites where shrub thinning and cholla planting have occurred

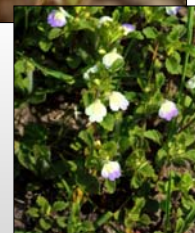
### Regional Benefits:

- Implements regional conservation strategies
- Increases the amount of suitable habitat
- Facilitates the dispersal of wrens within the region



## Otay Tarplant and San Diego Thornmint Restoration Grant

- Location: Central City Preserve
- Size: 15 acres
- Project Goals/Objectives:
  - Restore/enhance degraded habitat
  - Manage & increase grassland & clay lens habitat
  - Reduce weed competition
  - Reduce uncontrolled access
- Techniques:
  - Dethatching of non-native weeds using weed whips in the fall
  - Native seed collection and redistribution
  - Planting native plants to increase cover
  - Intensive Weed Control



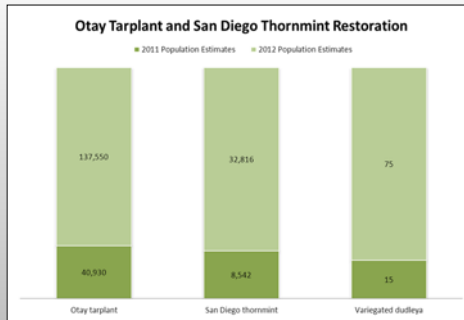
## Otay Tarplant and San Diego Thornmint Restoration Grant

### Results:

- Increased population/density despite below average rainfall

### Regional Benefits:

- Implements regional conservation strategies
- Protection/enhancement of a major population within the region





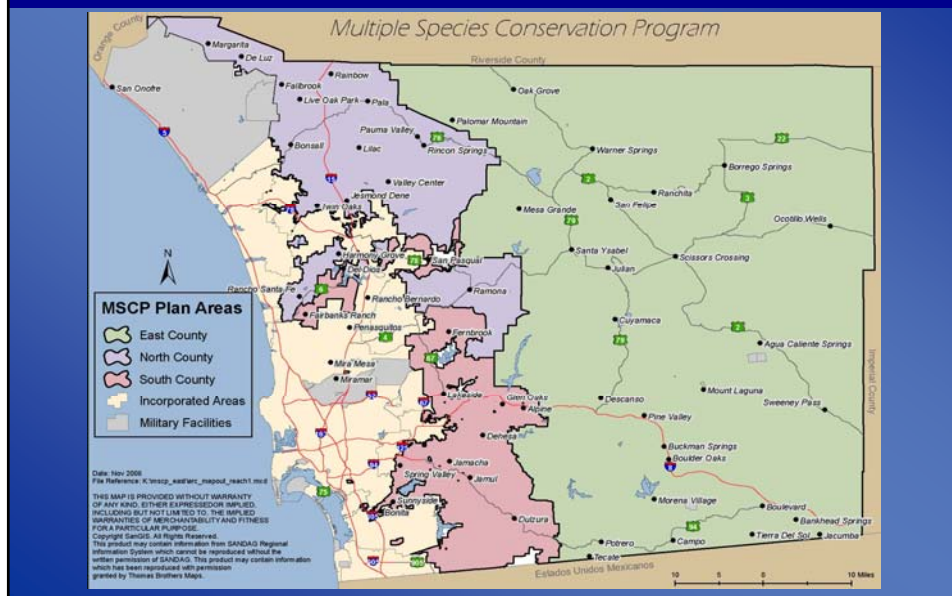
# Multiple Species Conservation Program



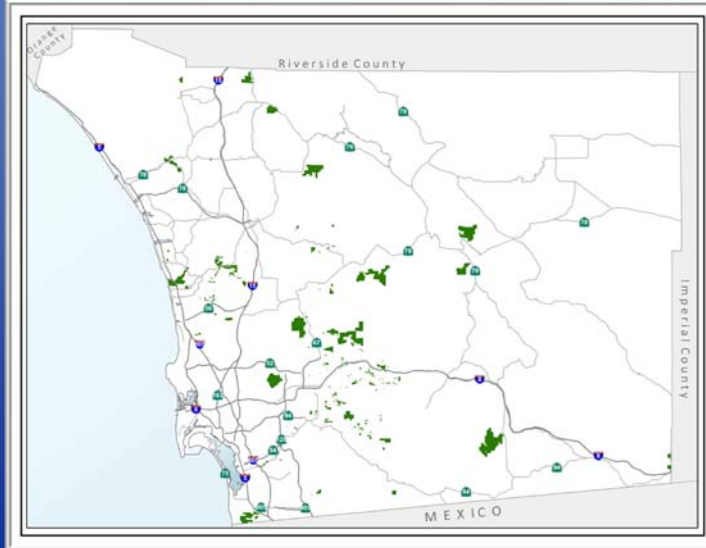
15 year recap of the  
Multiple Species Conservation Program



## County MSCP Plan Areas

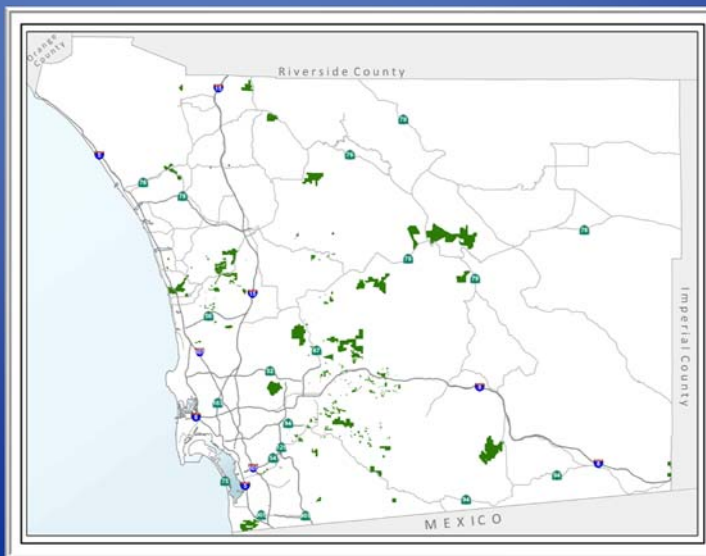


## County Parks & Preserves 1998



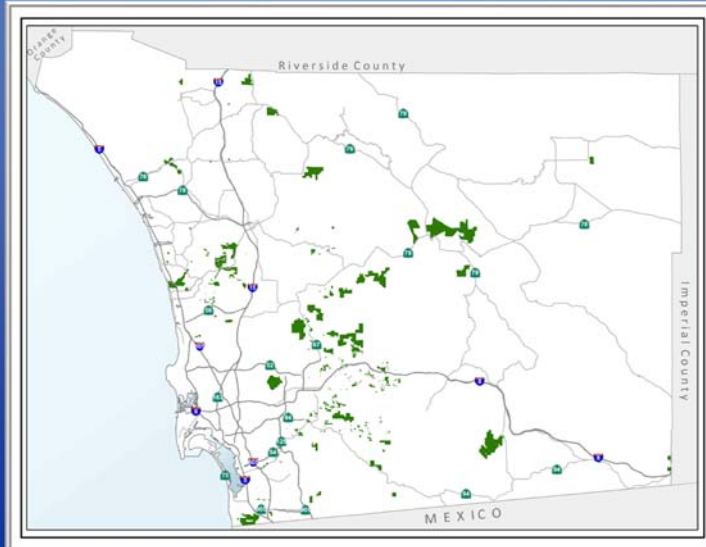
1998:  
28,000 ac

## County Parks & Preserves 1998 - 2001

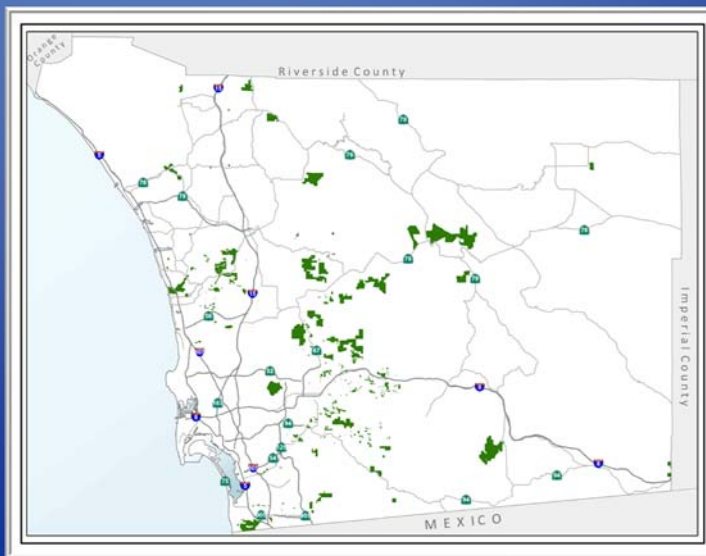




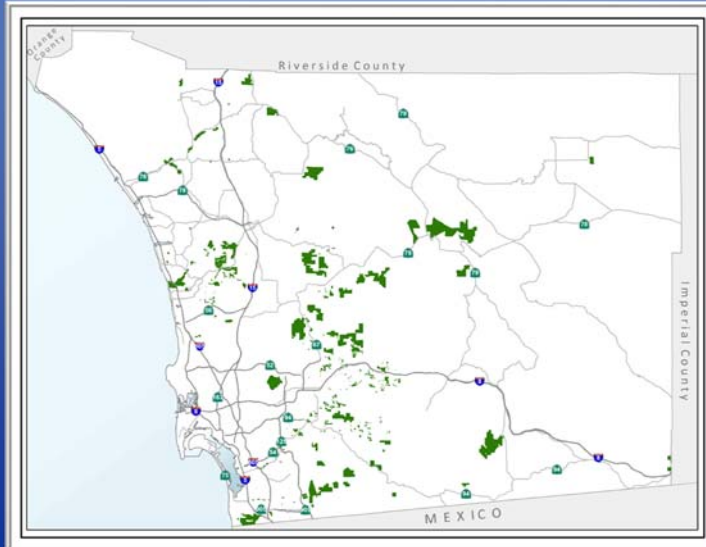
## County Parks & Preserves 1998 - 2004



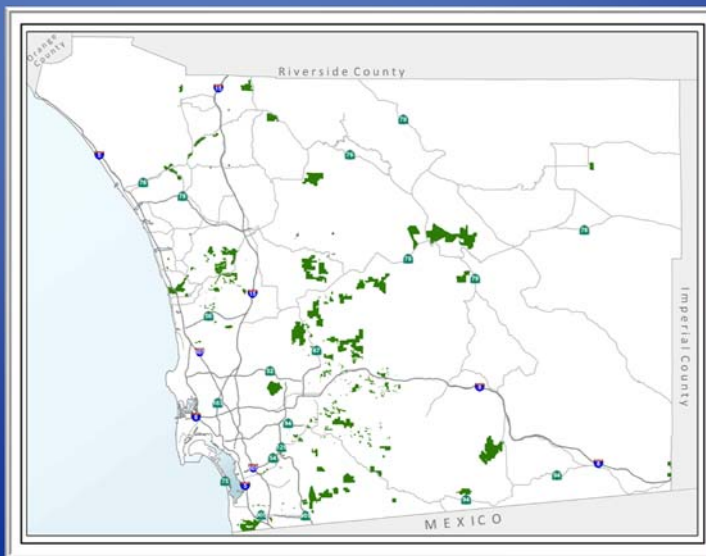
## County Parks & Preserves 1998 - 2007



## County Parks & Preserves 1998 - 2010



## County Parks & Preserves 1998 - 2012

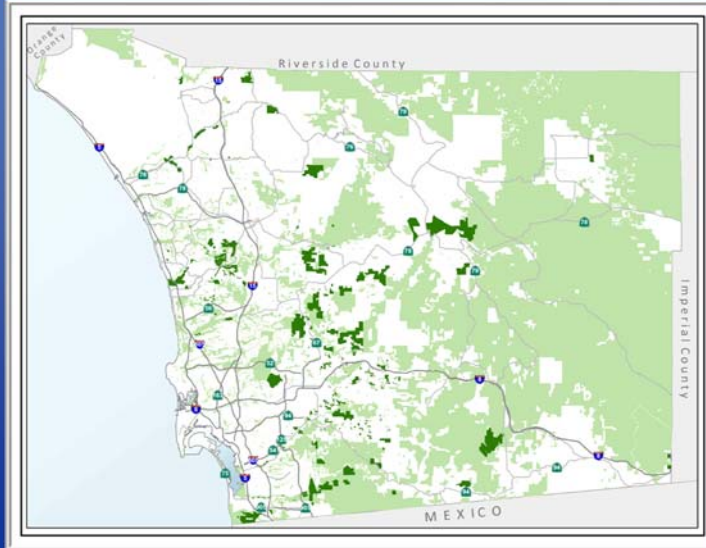


**1998:**  
28,000 ac

**2012:**  
46,000 ac



## All Preserve Lands 2012



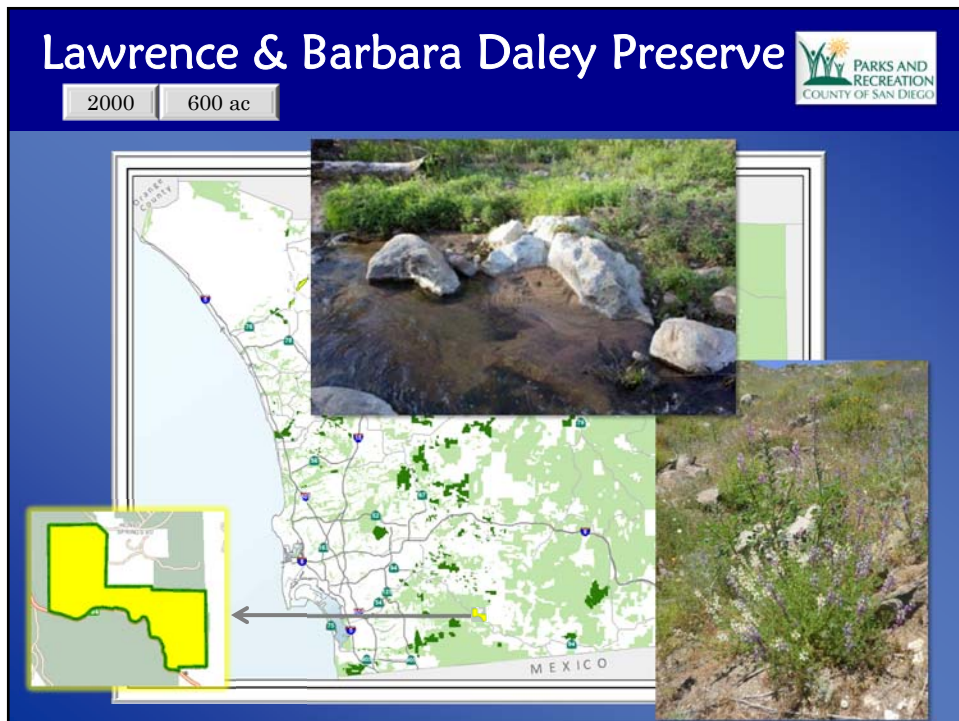
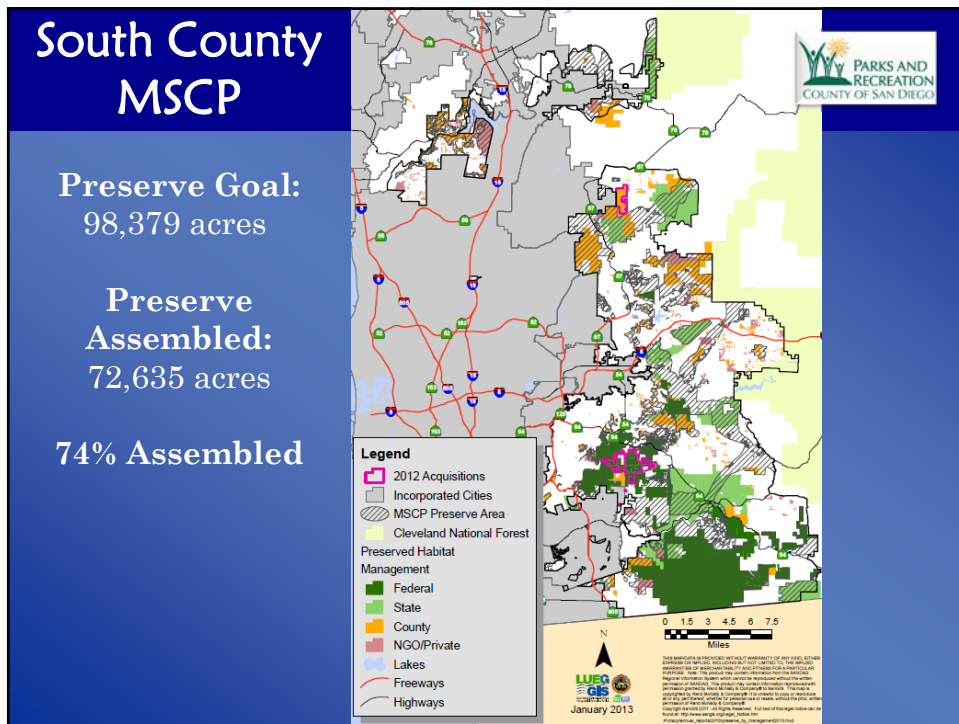
**Federal,  
State,  
County  
and  
Partners:**  
1.3 mil ac

## County Acquisitions



Plan Area	Acres	County \$	Partner \$	Total \$
South	6,855	\$32,317,922	\$32,931,802	\$65,249,724
North	4,951	\$25,655,144	\$46,608,101	\$72,428,246
East	6,360	\$5,369,573	\$9,300,000	\$14,639,574
<b>TOTAL</b>	<b>18,166</b>	<b>\$63,342,639</b>	<b>\$88,839,904</b>	<b>\$152,317,544</b>

- \$8,400/ac
- 42% - County funding
- 58% - Partner funding







# R I V E R P A R T N E R S





Creating Wildlife Habitat for the Benefit of People and the Environment

## Project Purpose:

- Post-fire removal of invasive, non-native weeds
- Development of a site specific, comprehensive restoration plan
- Permitting
- Complement downstream restoration efforts by California Department of Fish and Wildlife and San Diego Public Utilities Department (178 acres; 35,000 linear feet)



Photo Credit: K.C. Alfred/San Diego Union Tribune  
[http://interwork.sdsu.edu/fire/photo\\_gallery/2007\\_fires/harris-fire.html](http://interwork.sdsu.edu/fire/photo_gallery/2007_fires/harris-fire.html)



### Upper Project Area:

- Steep terrain and limited access
- Intact over-story
- Invasive understory



### California Conservation Corps



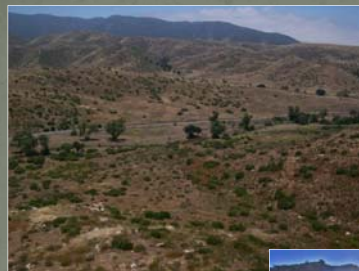


## Invasive Plant Removal Mapping



Removed over an acre of:

- Arundo
- Castor bean
- Eucalyptus
- Tamarisk
- Tree tobacco
- Canary island date palm




### 2013-2014 Objectives:

- Restoration Funding
- Continued Weed Control
- Connectivity of a major wildlife movement corridor and downstream restoration efforts








MSCP Annual Workshop


## Habitat Restoration in Tecolote Canyon Natural Park

Central Tecolote Mitigation Project


Keli Balo, Public Utilities Department

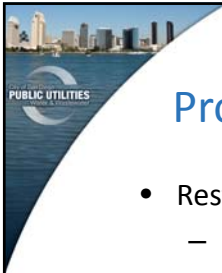
July 16, 2013





## Location

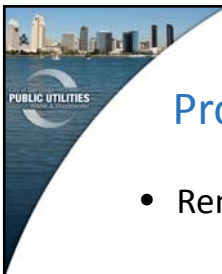




## Project Scope

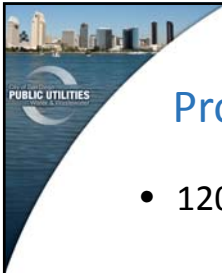
- Restoration of 3.05 acres of uplands
  - Diegan coastal sage scrub (Tier II)
  - native grassland (Tier I)
- Enhancement of 3.45 acres of riparian habitat
  - southern riparian forest
- 18+ acre weed management area

**Increase value and quality of habitats for native wildlife**



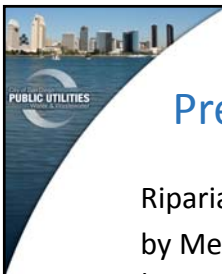
## Project Components

- Removal of invasive non-native plants
- Temporary irrigation system
- Grow/Kill Cycles
- Planting (container plants and cuttings) and seeding with native species



## Project Components

- 120-day Plant Establishment Period
- Wildlife Enhancement Features
- Active Maintenance and Monitoring Period
- Preservation and Long Term Management



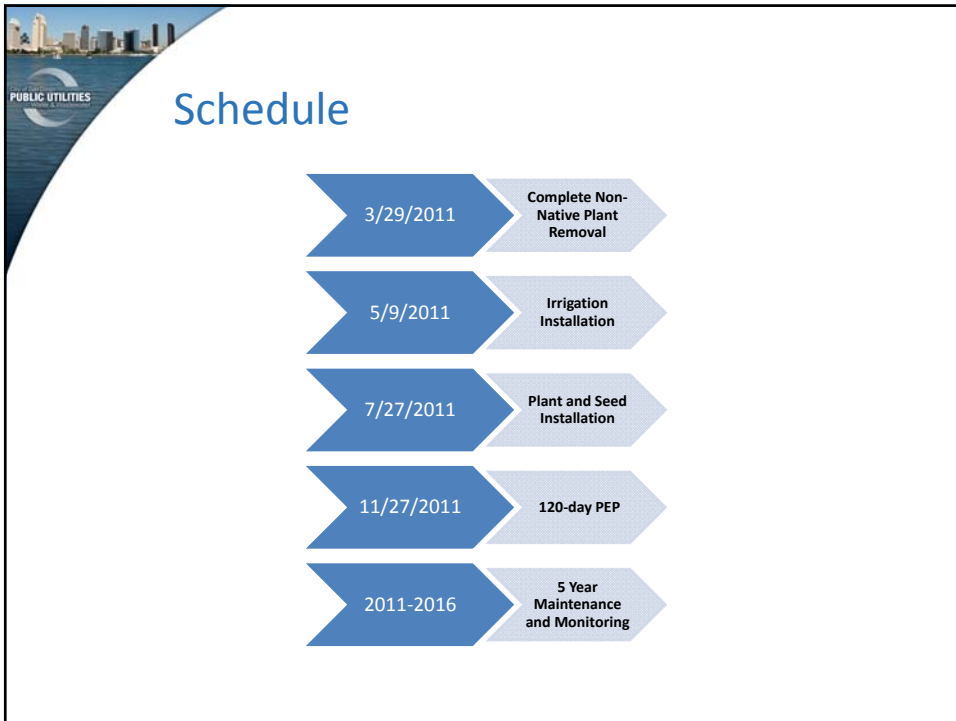
## Pre-Implementation Conditions

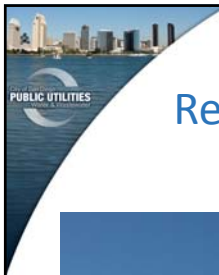
Riparian corridor degraded by Mexican fan palm, pepper trees, and pampas grass.



Uplands dominated by mustard, thistles, and non-native grasses.

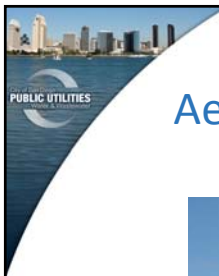






## Removal of Palm Trees

Removed 170 large palm trees  
(Mexican Fan Palm and Canary  
Island Date Palm)

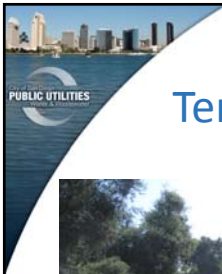


## Aerial Crane Operation Day #2





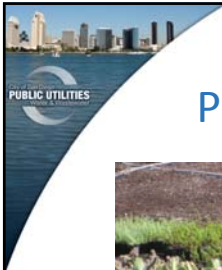
## Hauling Away Debris



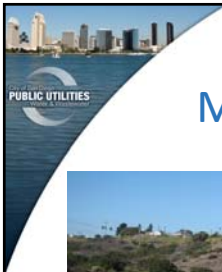
## Temporary Irrigation





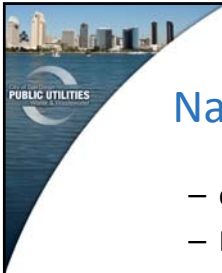


## Planting and Seeding



## Maintenance and Monitoring





## Native Plants

- coast live oak
- Mexican elderberry
- San Diego sagewort
- arroyo willow
- mulefat
- laurel sumac
- black sage
- coastal cholla
- wild rye
- needlegrass

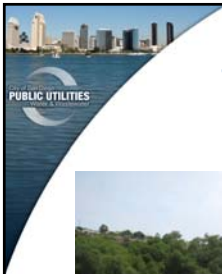


## Native Grassland Habitat Establishment Year 2





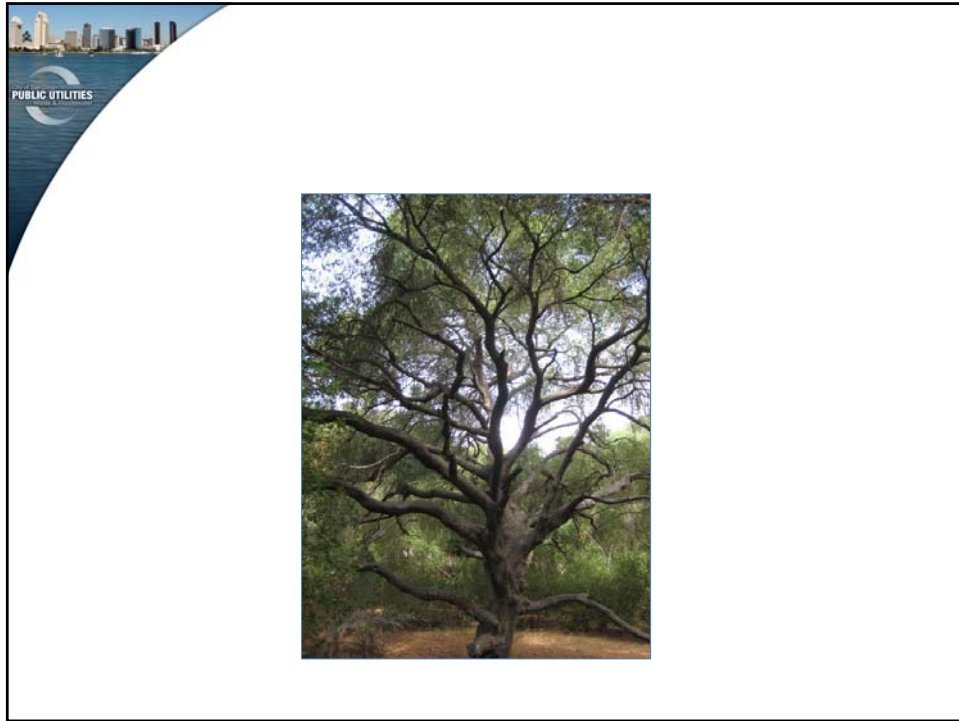
## Sage Scrub Habitat Establishment Year 2



## Southern Riparian Forest Habitat Establishment Year 2









## Preserve Visits with the Park Ranger



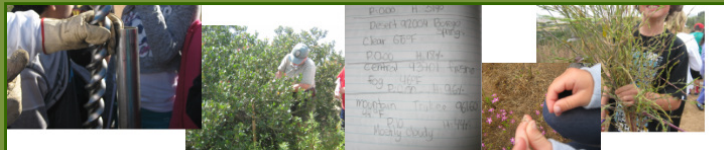
## Animal Studies



## Plant Studies



### Excerpt from [carmelmountainpreserve.com](http://carmelmountainpreserve.com)

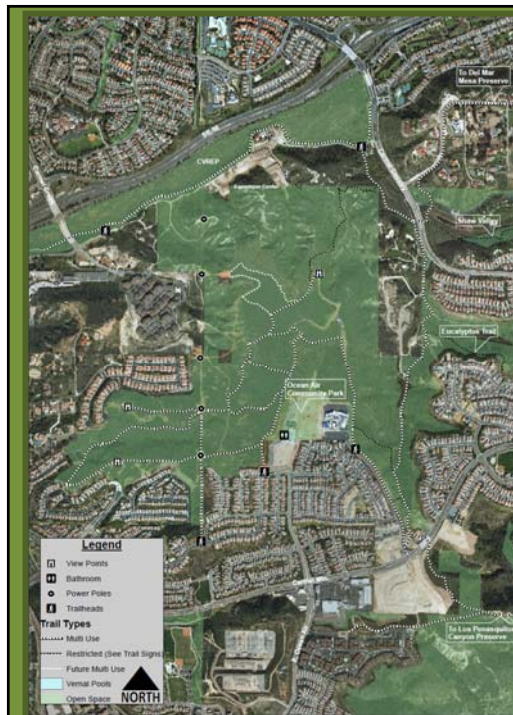


We are students who studied the Carmel Mountain Preserve and the vernal pools this year. We went up to the pools once a week to check for water level, animal life, plant growth, and other changes. As students, we took all the pictures you see on the website, as well as made a video, gave a presentation of the Preserve to the community, and collected rain fall data and compared it to life in the Preserve.

We listened, observed, measured, watched microorganisms under a microscope, took a GPS land survey, met a biologist, worked with the park Ranger, and most of all, learned so much from our experience. We look forward to sharing what we know with others through the years to come.



## Short-leaved Dudleya Monitoring



### Rules and Regulations

You are responsible for knowing and complying with the following regulations:

- Stay only on designated trails.
- Dogs and other pets must be under control and on a maximum 8 foot leash at all times.
- No smoking
- All plants, animals, rocks, artifacts and structures are protected. Do not disturb, remove, damage or collect.
- Firearms, bows, sling shots and air rifles are prohibited.
- Fires and fireworks of any kind are prohibited.
- Glass containers are prohibited.
- Littering is prohibited.
- Loud noise and amplified music are prohibited.
- Overnight camping is prohibited.
- No motorized vehicles.

Additional rules and regulations may be posted throughout the Preserve.

# 2012 MSCP Annual Report Workshop:

## U.S. Geological Survey –



Carlton J. Rochester and Robert N. Fisher  
U. S. Geological Survey, San Diego, CA, U.S.A.

# Trapdoor Spiders



The Barack  
Obama Trapdoor  
Spider



The Stephen  
Colbert Trapdoor  
Spider



The Angelina  
Jolie Trapdoor  
Spider



Fisher's Red  
Rock Trapdoor  
Spider



Bond, J. E. 2012. Phylogenetic treatment and taxonomic revision of the trapdoor spider genus *Aptostichus* Simon (Araneae, Mygalomorphae, Euctenizidae). *Zookeys* 252: 1-209.





# North County San Diego Western Pond Turtle Assessment

Focused surveys for western pond turtles (*Emys marmorata*)

Six watersheds, over twenty-five sites



## Arroyo Toad Habitat Occupancy

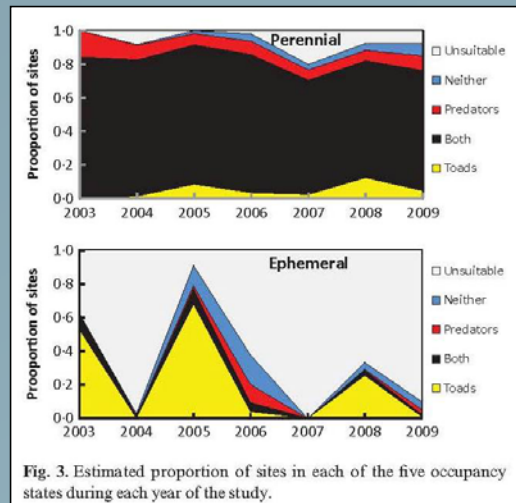


Fig. 3. Estimated proportion of sites in each of the five occupancy states during each year of the study.

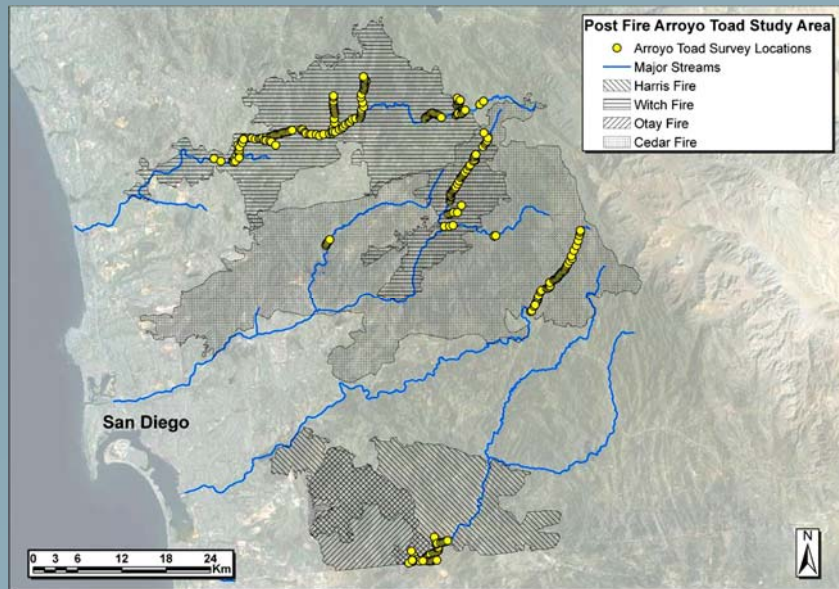
Miller, D. A. W., C. S. Brehme, J. E. Hines, J. D. Nichols and R. N. Fisher. 2012. Joint estimation of habitat dynamics and species interactions: disturbance reduces co-occurrence of non-native predators with an endangered toad. *Journal of Animal Ecology* 81(6):1288-1297.



## Arroyo toad probability of site colonization

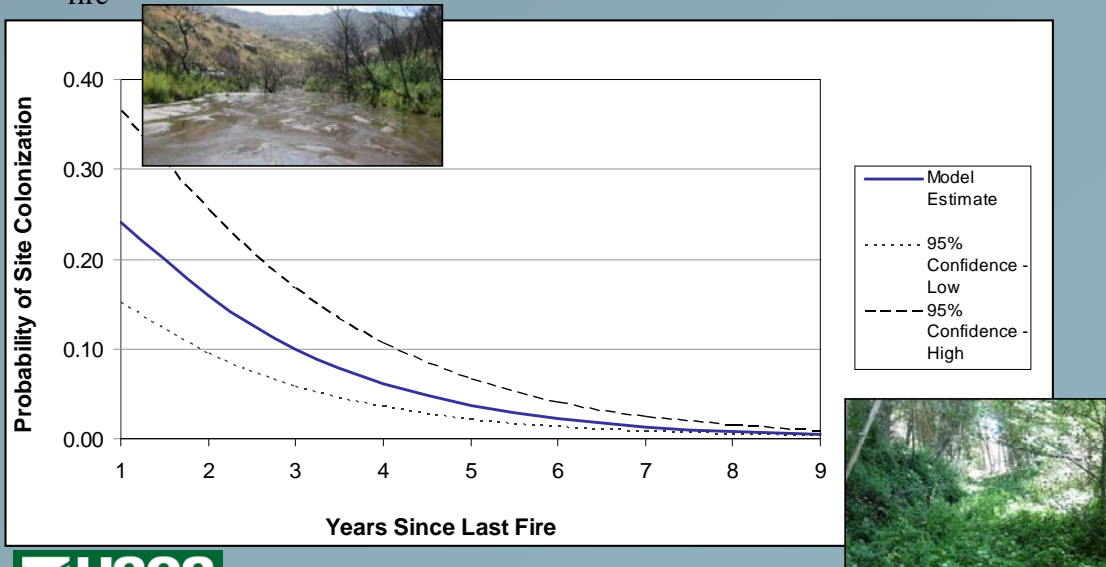
Probability an unoccupied site becomes occupied from year to year vs. years since last fire

2012 arroyo toad survey sites distributed across the 2003 and 2007 wildfire perimeters



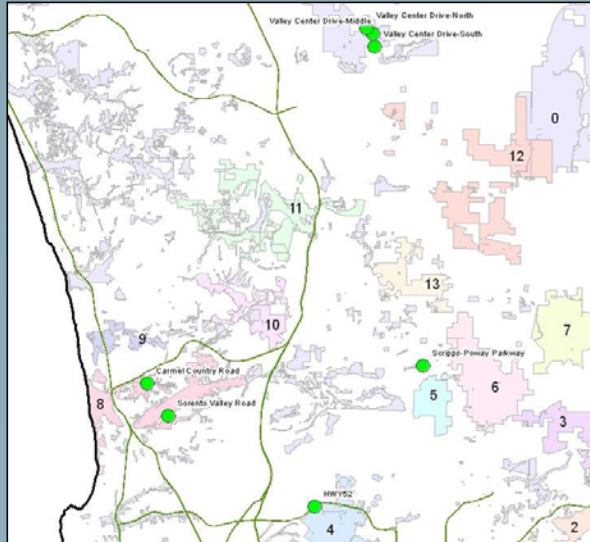
## Arroyo toad probability of site colonization

Probability an unoccupied site becomes occupied from year to year vs. years since last fire



## 2012 Underpass Evaluation and Enhancement

- Small vertebrate use of wildlife tunnels
- 8 tunnels with cameras
  - SR-52 at Mission Trails
  - Sorrento Valley Road
  - Carmel Country Road
    - North South
  - Scripps-Poway Parkway
  - Valley Center Road
    - North Middle South



## 2012 Underpass Evaluation and Enhancement



### Stack Structure –

- 4 cinder block bricks
- 1.5 in X 2.5 ft PVC pipe
- 3 in X 2.5 ft PVC pipe



### Stack

### Spacing –

- 5 meters

### Stack Count –

- HFT = 19 stacks
- SVR = 9 stacks
- CCN = 13 stacks
- VCM = 12 stacks





## 2012 Underpass Evaluation and Enhancement



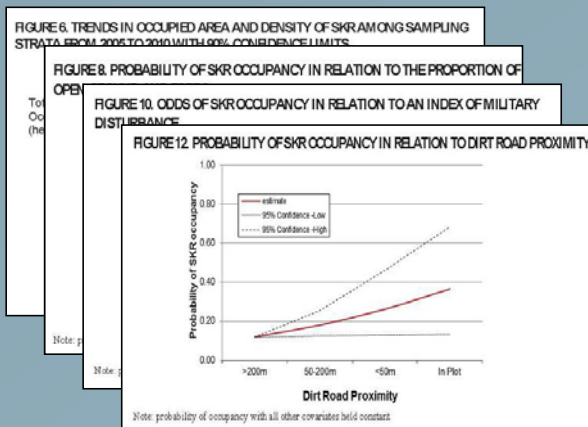
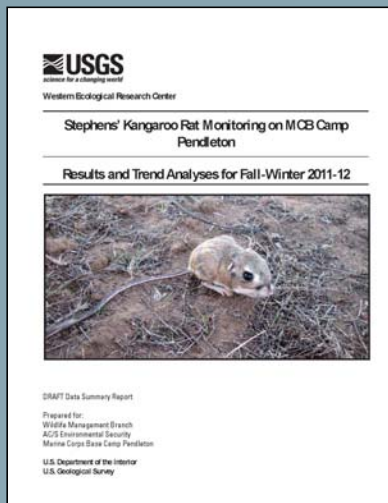
No snakes detected yet in the 2012 photos from Hwy 52



Very Preliminary Results –  
- Southern Pacific Rattlesnake passed all the way under Hwy 52



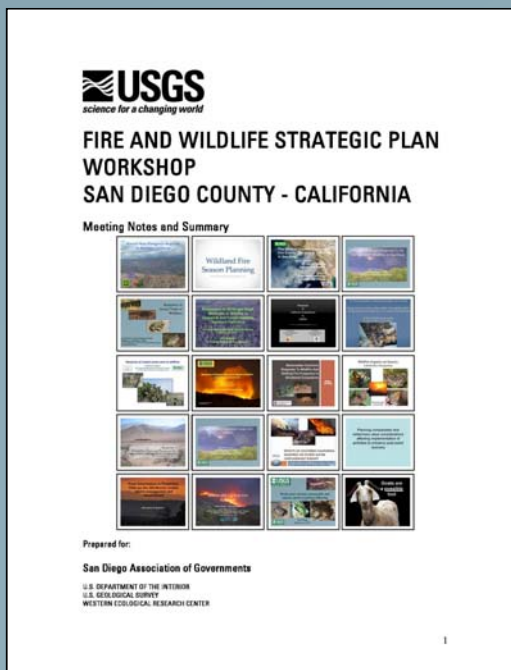
## Stephen's Kangaroo Rat



Brehme, C.S. , D.R. Clark, and Fisher, R.N., 2013. Stephens' Kangaroo Rat Monitoring on MCB Camp Pendleton: Results and Trend Analyses for Fall-Winter 2011-12. DRAFT Data Summary prepared for AC/S Environmental Security, Marine Corps Base, Camp Pendleton. 40pp.

## Wildfire Workshop

- Hosted in collaboration with SDMMP
- March 13-14, 2013
- Presentations on:
  - Fire management practices of USFS, MCB Camp Pendleton, BLM, and CalFire
  - Impacts of 2003 and 2007 fires to at-risk biological resources



## Wildfire Workshop

Presentations, summaries of presentations, and reference material:

<ftp://ftpext.usgs.gov/pub/wr/ca/san.diego/2013FireWorkshop2/>

Video recordings of all presentations and discussions:

<http://www.youtube.com/channel/UC269WDMrkne76K5zvwbddDw?feature=watch>



# Thanks:

- **Funding:**

- California Department of Fish and Wildlife – Local Assistance Grant
- San Diego Association of Governments
- U. S. Geological Survey

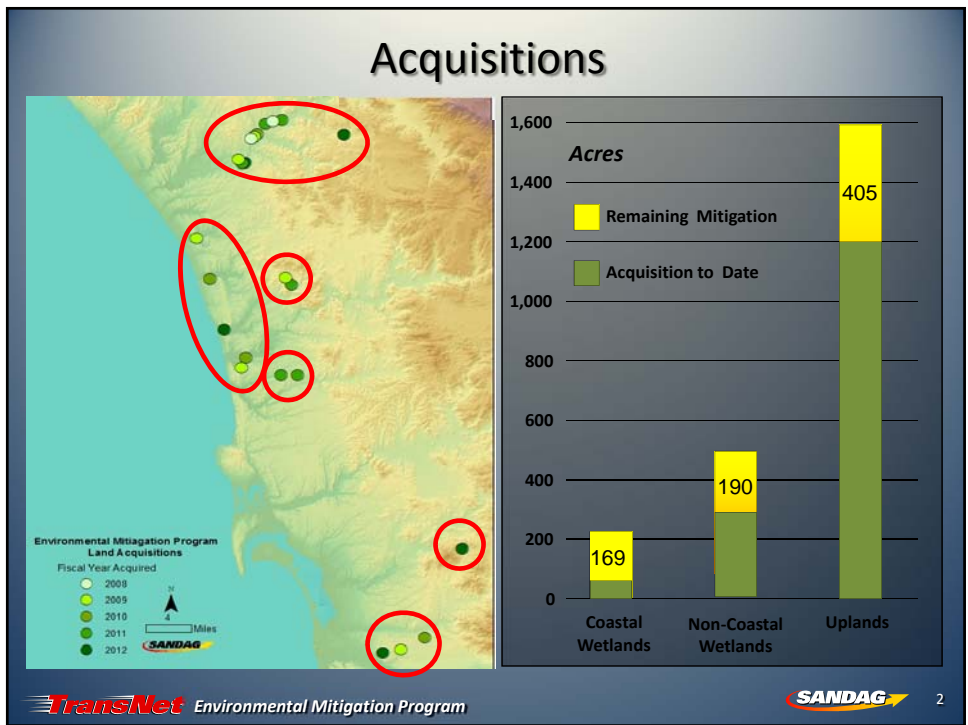


- **Site access:**

- California Department of Fish and Wildlife
- County of San Diego Parks & Recreation
- U.S. Fish and Wildlife Service
- And many others







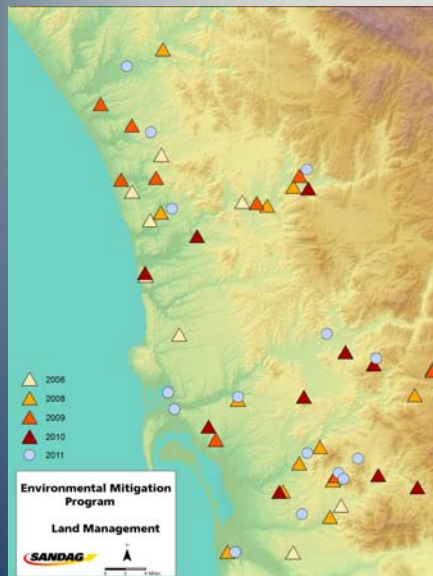
## Regional monitoring and land management



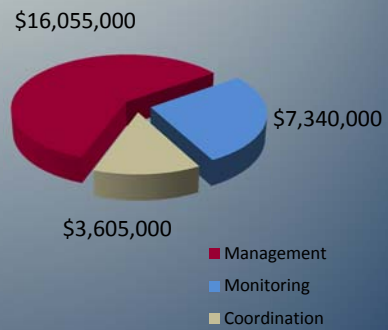
**TransNet** Environmental Mitigation Program

**SANDAG** 3

## REGIONAL MANAGEMENT and MONITORING



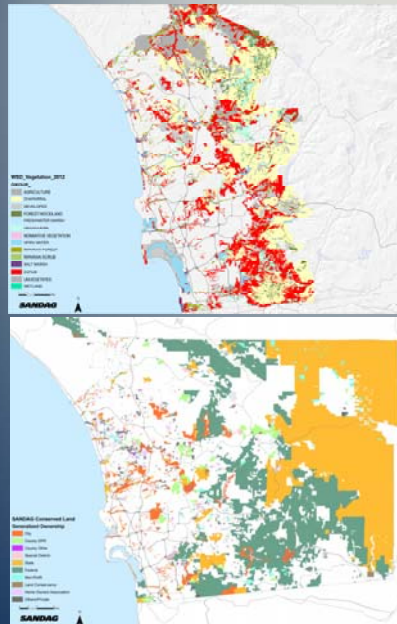
**FY 2006-2013**



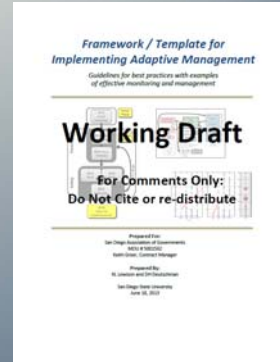
**TransNet** Environmental Mitigation Program

**SANDAG** 4

## Milestone in FY 2013



Updated Vegetation Mapping



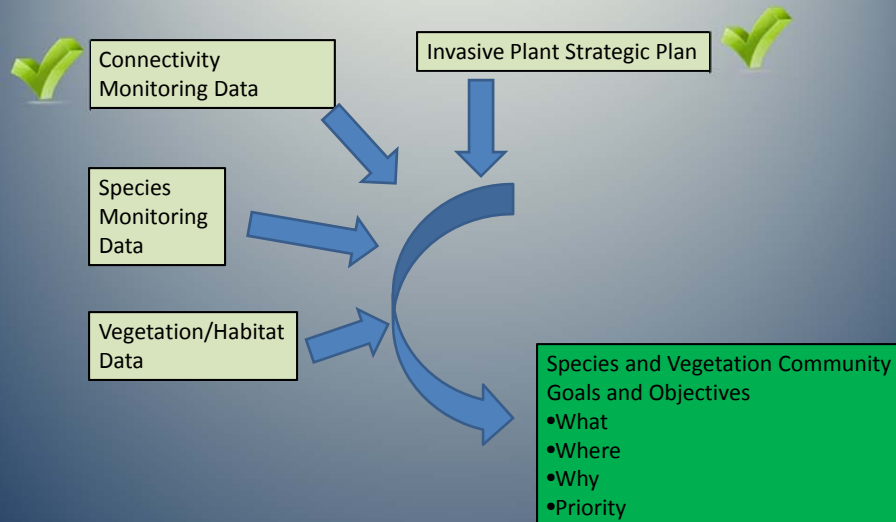
Adaptive Management Framework

Conserved Lands Database



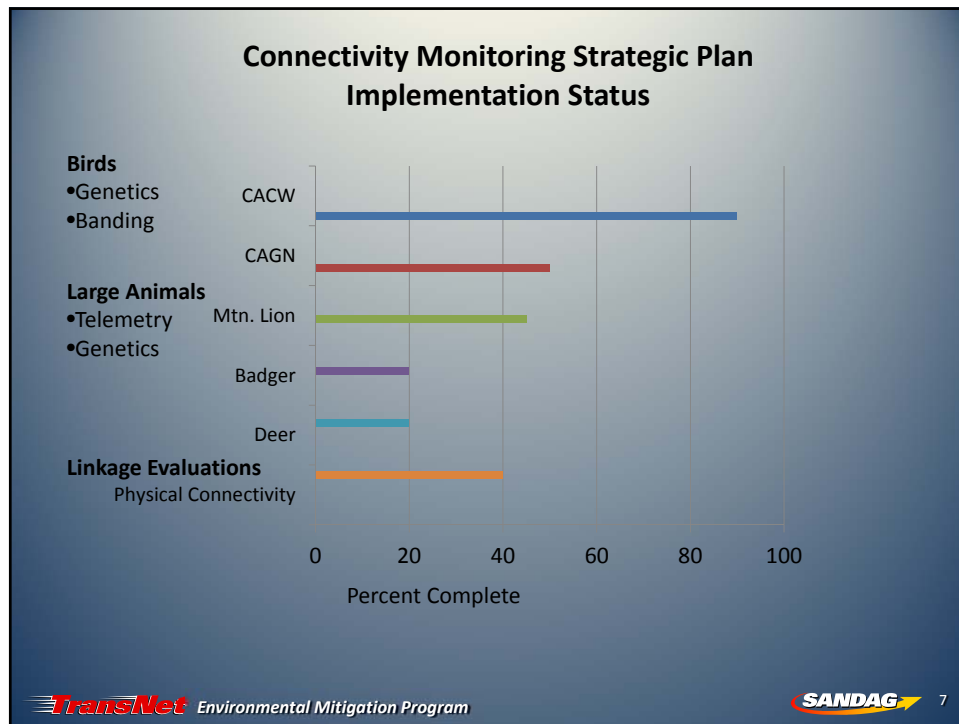
5

## Management Strategic Plan



6



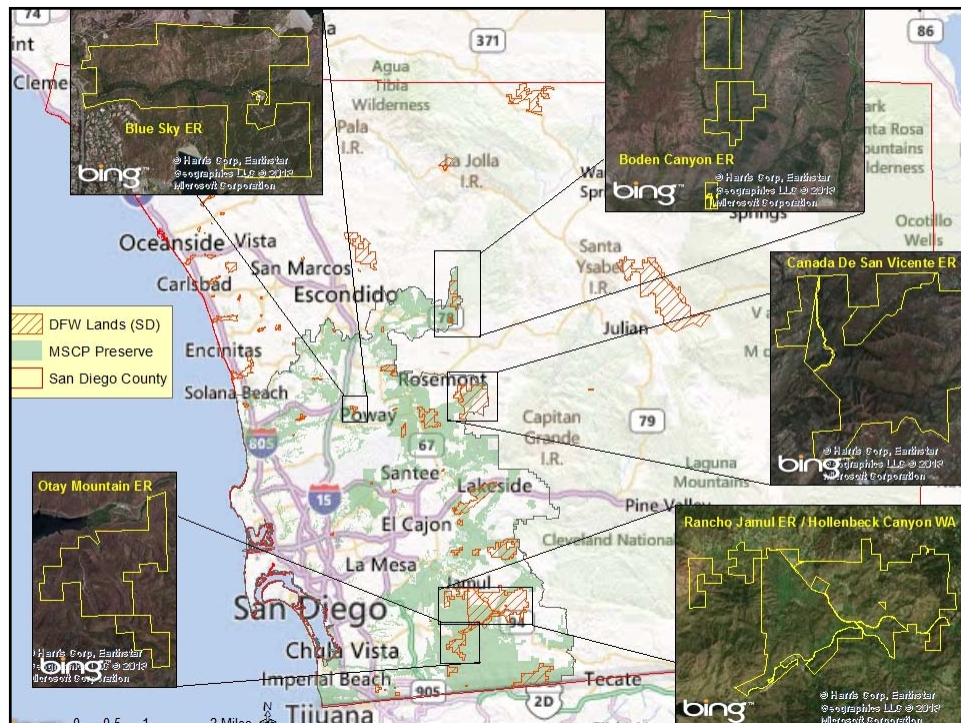


## What is Next?

- Management Strategic Plan (MSP) – September
- Call-for-Land Acquisition Projects – October
- Align Funding and Monitoring and Management Activities per MSP
- [www.keepsandiegomoving.com](http://www.keepsandiegomoving.com)
- [www.sdmmp.com](http://www.sdmmp.com)

# California Department of Fish and Wildlife

Multiple Species Conservation Program  
Annual Public Meeting  
July 16, 2013



## Blue Sky Ecological Reserve

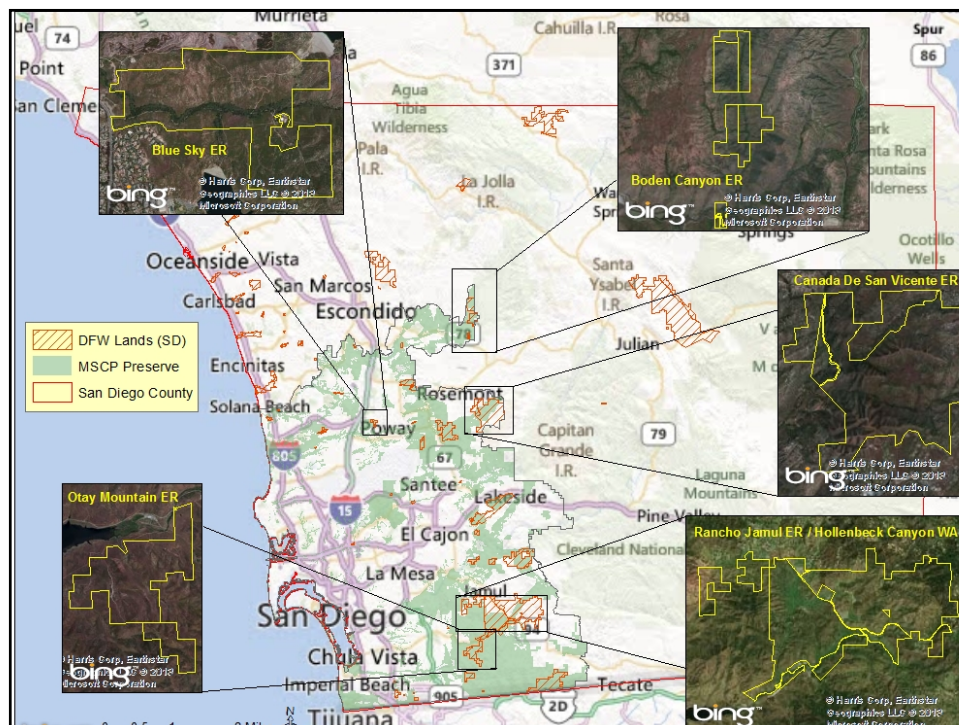


## Blue Sky Ecological Reserve





## Blue Sky Ecological Reserve



## Boden Canyon Ecological Reserve

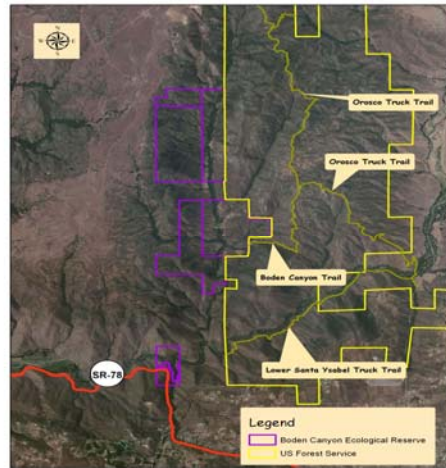


## Boden Canyon Ecological Reserve





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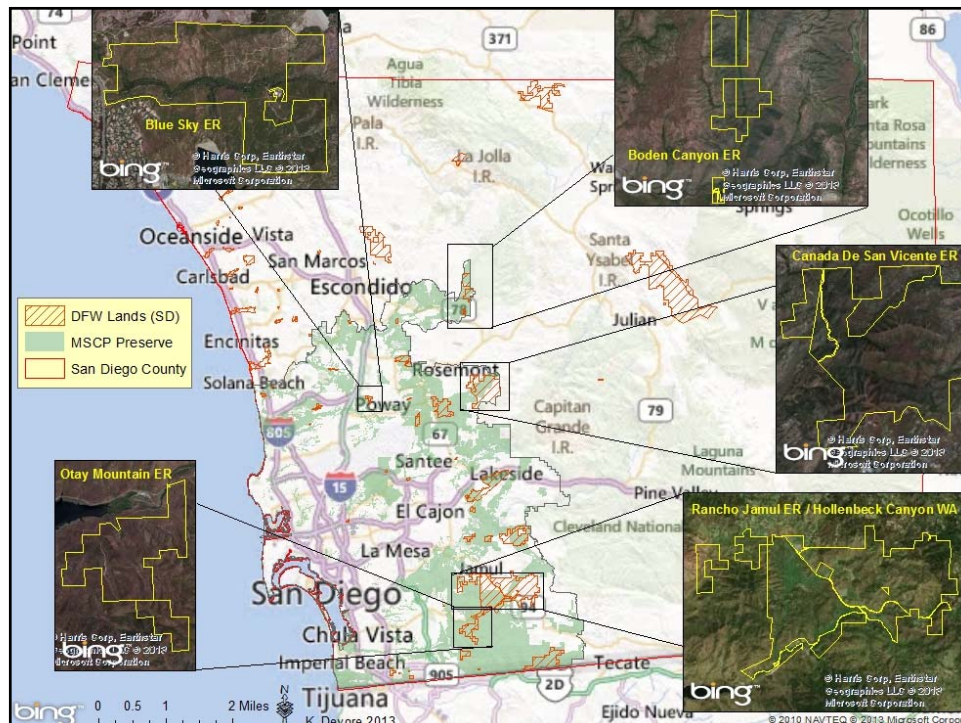


## Boden Canyon Ecological Reserve





## Boden Canyon Ecological Reserve





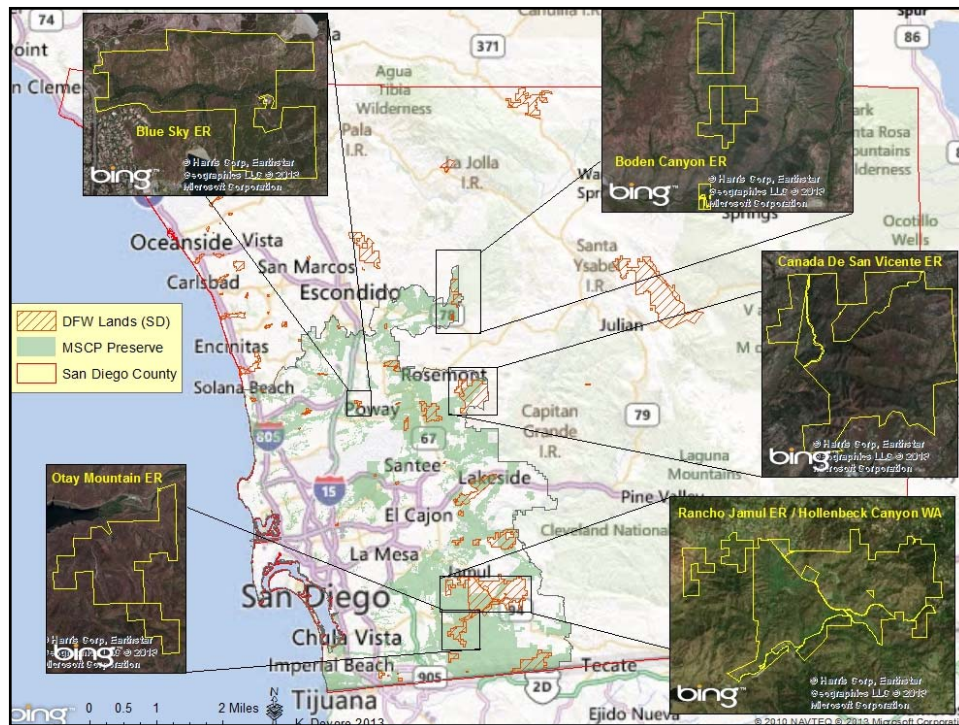
## Cañada de San Vicente



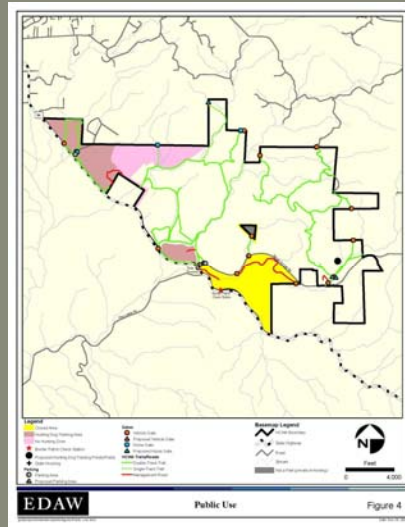
## Cañada de San Vicente



# Cañada de San Vicente



## Hollenbeck Canyon Wildlife Area

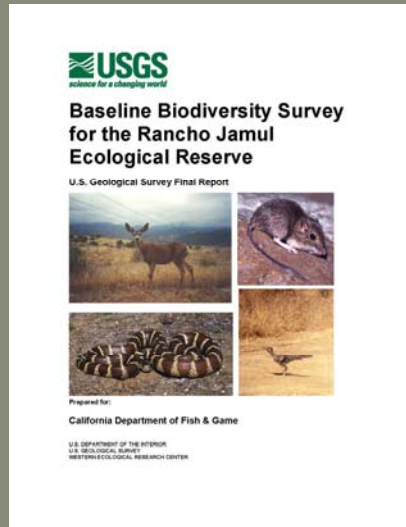


## Rancho Jamul Ecological Reserve





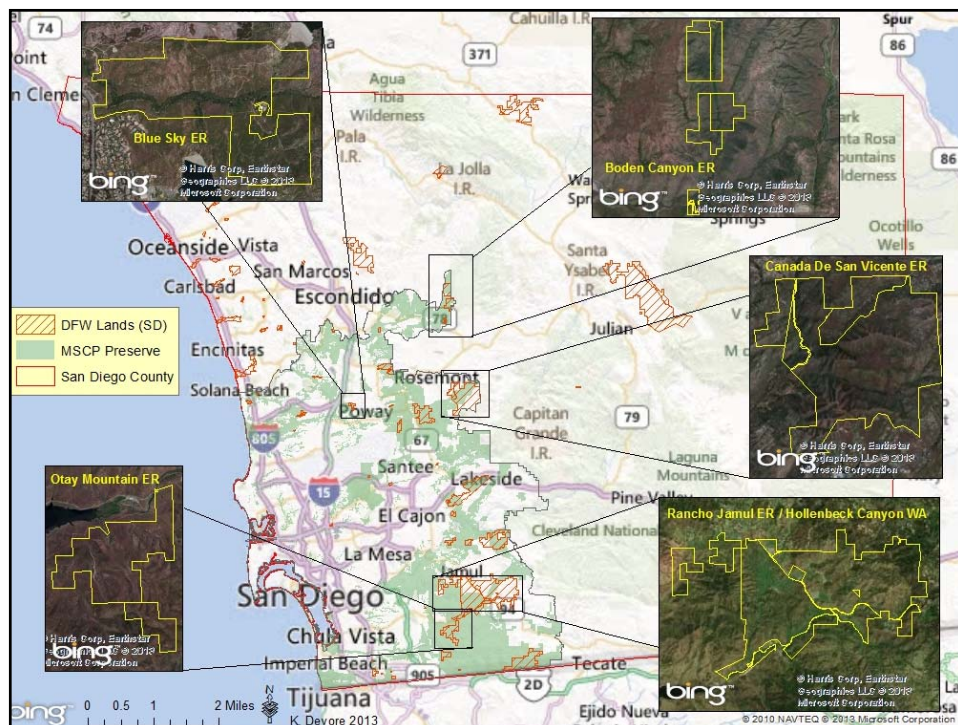
## Rancho Jamul Ecological Reserve



## Rancho Jamul Ecological Reserve



## Rancho Jamul Ecological Reserve



## Otay Mountain Ecological Reserve



































































